

Targets and Indicators Southwest Ecodistrict

Overview

The following targets and indicators have been developed to analyze the proposed alternatives for the SW Ecodistrict. The targets are quantitative - meaning we will be able to measure how well an alternative meets an objective with actual numbers. The indicators represent what we'll actually measure. The majority of targets are grounded in the Monumental Core Framework Plan, LEED ND, ALSA/US Botanical Gardens Sustainable Sites and Executive Order 13514: Leadership in Environmental, Energy and Economic Performance. While EO 13514 often uses a 2008 baseline as the point from which to measure progress, we have chosen to use fiscal year 2009 because we want to compare future alternatives with the area's conditions today (and this is the most up to date information available).

There will also be a qualitative analysis of the proposed alternatives which is not represented in the table below. This will include comparing the quality of urban design, views, etc. in the proposed alternatives. A separate list of urban design criteria will be developed for this purpose.

Goal 1: Create a Livable Community, Workplace and National Cultural Destination

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments
1. Dedicate the most prominent and other less prominent sites for civic uses, distinguished settings, and parks.	Increase the # of prominent sites for civic uses, distinguished settings, and parks beyond what exists today.	# of sites for museums, memorials, commemorative opportunities, and parks	#	The Overlook and Reservation 113 exist as civic sites but need revitalization.	Comment: the Framework Plan proposes <ul style="list-style-type: none"> Reservation 113 as a park The Overlook as a commemorative site Independence and 12th Street as a commemorative site. Rationale for Target: Will not be able to set a number until the Market Feasibility Study is complete.
2. Restore historic squares, streets, and avenues and enhance views and	Historic streets / squares / avenues	# of streets / squares / avenues restored	#	0	Comment: "historic" refers to streets, squares, and avenues in

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symbolic relationships.	<ul style="list-style-type: none"> ▪ Rail line/Maryland Ave ▪ Reservation 113 ▪ 9th, 11th St SW ▪ Virginia Ave ▪ C Street ▪ F Street (Southwest Freeway) 				<p>the L'Enfant Plan.</p> <p>Rationale for Target: proposed in the Monumental Core Framework Plan</p>
	<p>Views / Symbolic Relationships</p> <ul style="list-style-type: none"> ▪ From the Smithsonian Castle toward the Overlook ▪ From the Overlook toward the Smithsonian Castle ▪ From the Overlook toward the waterfront ▪ From the Overlook down the river ▪ From Maine Ave toward the Washington Monument ▪ From the waterfront toward the Overlook ▪ Down 9th Street toward the waterfront ▪ From Maryland Avenue toward the Capitol ▪ From Virginia Avenue to 	# of views restored	#	<p>The following views exist today:</p> <ul style="list-style-type: none"> ▪ From the Overlook toward the waterfront (good) ▪ From the Overlook down the river (good) ▪ From Maine Avenue toward the Washington Monument (fair) ▪ From the waterfront toward the Overlook (?) ▪ Down 9th Street toward the waterfront 	<p>Comment: Simply increasing the # of views/symbolic relationships does not mean they will be of high quality. Other design criteria will need to address view quality.</p> <p>Rationale for Target: proposed in the Monumental Core Framework Plan</p>

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	Reservation 113 <ul style="list-style-type: none"> From Virginia Ave to the Washington Monument Relationship of the Overlook to Potomac Park 				
3. Provide for a mix of uses that support places to live, work, play, and commemorate.	Mix of Uses <ul style="list-style-type: none"> 30% of new development/redevelopment should be residential ___% open space ___% commercial ___% cultural 	% of each individual land use	# of square feet of each land use / total square feet of area	Parks=9.4% Fed Office = 48% Office/retail=28.6% Infrastructure=17% Residential= 0% Cultural = 0%	Comments: We cannot develop a specific target until the market feasibility study is complete. However; the Framework Plan calls for residential uses so given the amount of office/retail that is existing (and likely to remain) we should strive for a larger percentage of residential use in new development / redevelopment. Rationale for Target: Residential Target = LEED ND SLL Credit 5 Other Targets = Monumental Core Framework Plan
	Civic or passive-use space such as a square, park, or plaza must be at least 1/6 of an acre and lie within a ¼ mile walk distance of 90% of dwelling units and nonresidential building entrances. The median size of these spaces within	Size and proximity of civic or passive-use space to residential and commercial uses.	Distance measured in miles Civic/passive-use space measured in acres	This goal has been met because of proximity to the National Mall.	Rationale for Target: LEED ND NPD Credit 9

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	and/or contiguous to the project must be at least ½ acre.				
4. Establish a walkable community that is distinctive and engaging.	Sidewalks on 100% of both sides of streets	Sidewalks	% of streets with sidewalks	TBD	Rationale for Target: Monumental Core Framework Plan
	14 new intersections	Intersections	# of new intersections	0	Comments: More intersections mean smaller blocks which are more pedestrian friendly. Rationale for Target: This would be the number of intersections that would be added if the proposed streets were restored or made continuous.
	Ground floor retail along 60% of building façade for at least half of all office buildings on primary pedestrian corridors. Ground floor retail along 60% of building façade for all mixed-use buildings on primary pedestrian corridors.	Amount of ground floor retail along building façade	% of ground floor devoted to retail along building facade	0%	Comment: All ground floors should be animated. The urban design criteria will address this. The ground floor space needs to be viable space (i.e. deep enough) to support retail. Rational for Target: Same as LEED ND NPD Prerequisite 1
	At least 50 percent of rainwater/stormwater features within the area are designed as landscape amenities.	Rainwater / Stormwater	% of rainwater / stormwater features	0%	Rational for Target: ASLA Sustainable Sites Credit 3.7

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5. Ensure that ground floors and open spaces are publically accessible, and provide services and amenities.	<p>Ground floor retail/active uses along 60% of building façade for at least half of all office buildings on primary pedestrian corridors.</p> <p>Ground floor retail/active uses along 60% building façade for all mixed-use buildings on primary pedestrian corridors.</p>	Amount of Ground floor retail along building façade	% of ground floor devoted to retail along building facade	0%	Rational for Target: Same as LEED ND NPD Prerequisite 1
6. Improve linkages and connections to surrounding destinations and neighborhoods	<ul style="list-style-type: none"> ▪ Physical access to South Waterfront via 9th and 10th Streets ▪ Visual connection from the Mall to the Overlook by removing the Forrestal Building overhang on 10th Street ▪ Access to the National Mall ▪ C Street to Reservation 113 				Rationale for Target: these 3 sites are proposed in the Monumental Core Framework Plan and the Museums and Memorials Master Plan.

Goal 2: Create a National Showcase of Sustainability

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments / Rationale
1. Minimize the energy demand through improved urban form and building design.	A <u>zero net energy</u> EcoDistrict on an annual basis	Annual Energy Use (kilowatt hours)	Ratio of energy use / building square feet	TBD	<p>Comment: <u>Zero net energy</u> for this area means that the amount of energy demanded by the area is equal to the amount produced within the area or from nearby renewable energy resources.</p> <p>Rationale for Target: Executive Order 13514 requires that all new federal buildings that begin the planning process in 2020 must be zero net energy by 2030. The EO also requires that agencies pursue cost-effective, innovative strategies (e.g., highly-reflective and vegetated roofs) to minimize consumption of energy and increase agency use of renewable energy (in general and on-site) to reduce greenhouse gas emissions. Even though this is an aggressive target (since not all sites will be redeveloped), planning at a precinct scale should make it more achievable.</p>
2. Maximize the use of renewable energy resources (solar, geothermal, wind, biomass, etc.) and <u>shared energy technology</u> .	A zero net energy EcoDistrict on an annual basis	Renewable energy generated/captured within the area	% of total energy supply that is from renewable energy generated/captured within the ecodistrict or nearby.	TBD	<p>Comment: <u>Energy sharing opportunities</u> might include energy that can be captured from data centers in office buildings and reused to heat residential buildings at night.</p> <p>Comment: The implementation of renewable resources will need to meet the urban design criteria.</p> <p>Rationale for Target: Same rationale as above.</p>

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments / Rationale
3. Reclaim, recycle, and compost the majority of waste generated within the area.	100% reduction compared to the baseline today	Solid waste going to the land-fill on an annual basis	pounds/capita/year for residential units; pounds/capita/year for office tenant	TBD	Comment: waste is defined as solid and organic waste. Rationale for Target: EO 13514 requires that at least 50% of non hazardous solid waste (using the 2010 baseline) should be diverted from the landfill by 2015, excluding construction and demolition debris. Therefore by 2020 we should strive for 100%.
4. Minimize construction waste associated with redevelopment.	75% diverted from landfill.	Construction waste	pounds of construction waste pounds recycled	N/A	Comment: This will only apply to the proposed alternatives (no baseline number). Rationale for Target: EO 13514 requires a 50% reduction in construction debris to the landfill (compared to the 2010 baseline) by 2015. EPA strives for 75% > 20,000 sf which would be a more aggressive target for this project.
5. Capture, treat and reuse stormwater and greywater within the area.	Manage a 95 th percentile rain event (1.7 inches in DC) within the ecodistrict through infiltration, evapo-transpiration, and/or the harvesting and use of rainwater.	Captured rainfall on an annual basis (XX gallons)	Gallons of stormwater that are captured in pervious areas, vaults, rain barrels, cisterns, etc.	TBD	Comments: the metric does not need to be a ratio (i.e. per person or per sf) since the amount of rainfall will remain relatively constant between 2010 and 2020. Rationale for Target: EPA published guidance on EISA Section 438 in December 2009. This is the same requirement.
	Satisfy all non-potable water needs with stormwater/greywater (XX gallons)	gallons	% increase in non-potable water used for landscaping, toilets, equipment, etc (compared to 2009 baseline)	0% for federal properties	Comments: We won't know the specific target in terms of gallons until the plan is developed. Rationale for Target: we won't be able to use all captured rainwater from the area for non-potable water

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments / Rationale
					uses (simply too much). Therefore we will need to identify other areas that can use this water and whether it is worth moving the water to these areas in terms of greenhouse gas emissions (verses ghgs that would be emitted sending it to the treatment plant)
	Satisfy nearby non-potable water needs with the ecodistrict's captured stormwater. (XXgallons)	gallons	% increase of captured stormwater that is reused nearby (i.e. the Mall, the Botanical Gardens, etc).		<p>Comments: We are assuming that there will be too much captured stormwater to be used entirely within the area.</p> <p>Rationale for Target: we won't be able to use all captured rainwater from the area for non-potable water uses (simply too much). Therefore we will need to identify other areas that can use this water and whether it is worth moving the water to these areas in terms of cost and greenhouse gas emissions (verses ghgs that would be emitted simply sending it to the treatment plant)</p>
	Provide vegetated open space within the project boundary such that the amount of vegetated open space exceeds local zoning requirements by 25% (includes green roofs)				<p>Comments: I can't find an open space requirement (let alone vegetated open space) in the DC zoning code for individual sites. There is a 10% public space requirement for mixed-use projects and a 75% maximum lot occupancy requirement.</p> <p>Rationale for Target: LEED for sites Credit 5.2</p>
	At least 50 percent of rainwater/stormwater features within the area are designed as	Rainwater / Stormwater	% of rainwater / stormwater features	0%	Rational for Target: ASLA Sustainable Sites Credit 3.7

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments / Rationale
	landscape amenities. .				
6. Reduce potable water consumption	50% reduction of 2009 baseline by 2020	gallons	% decrease in potable water use per capita (or per sf?)		Rationale for Target: EO 13514 requirement is a 26% reduction of 2007 baseline by 2020. The working group felt this wasn't aggressive enough.
7. Reduce the ecodistrict's greenhouse gas emissions substantially	28% reduction of 2009 fiscal year baseline by 2020.	Greenhouse gas emissions	Tonnes?	TBD	<p>Comments: We are only looking at Scope 1 and 2 emissions. These will include emissions from the following: electricity consumed by buildings; steam used for heating/cooling buildings; solid waste generated by the buildings and landscape; wastewater from buildings; energy used to power streetlights. We will not take into account any offsets that are purchased today nor will we use offsets to meet our goal.</p> <p>Rationale for Target: Per EO 13514 Federal Agencies have committed to a 28% ghg reduction by 2020 compared to the 2008 baseline (we'll use 2009).</p>
8. Promote the ecodistrict's sustainability technology and practices.	A network of interpretive signs throughout the area.	N/A	N/A	0	

Goal 3: Ensure Mobility, To, From, and Within the Area for all Modes of Travel

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments
1. Develop a more complete network of streets	<ul style="list-style-type: none"> ▪ Rail line/Maryland Ave ▪ Reservation 113 ▪ 6th, 9th, 10th, 12th Streets SW ▪ Virginia Ave ▪ C Street 	Rebuilt streets	# of streets rebuilt	0	Rationale for Target: proposed in the Monumental Core Framework Plan
	<ul style="list-style-type: none"> ▪ 14 new intersections 	Intersections	# of new intersections	0	Rationale for Target: This would be the number of intersections that would be added if the proposed streets were restored or made continuous.
2. Provide a continuous network of bicycle lanes and sidewalks that connect to surrounding destinations and neighborhoods.	Sidewalks on 100% of both sides of streets	Sidewalks	% of streets with sidewalks	TBD	Comment: LEED ND requires that sidewalks in front of retail be 8ft wide and all others 4 ft wide. I would prefer not to specify (ours will be much wider). Thoughts? Rationale for Target: LEED ND requires 90%
	One continuous east-west route and one continuous north-south route connected to the larger bicycle network in the city.	Bike lanes	Bike lanes	0	Rationale for Target: Common Sense
	Physical access from the National Mall to the Waterfront	# of access points (i.e. along 9 th St, 10 th St. etc.)	Access points		Rationale for Target: Monumental Core Framework Plan

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Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments
3. Ensure that the area is served by a connected and efficient system of public transit.	Supply transit service such that at least 50% of dwelling units and nonresidential building entrances are within a ¼ mile walk distance of bus and/or streetcar stops, or within a ½ mile walk distance of bus rapid transit stops, light or heavy rail stations.	Average distance of all residents/ employees to closest transit stop	Feet	Likely this target is already met given existing transit service	Rationale for Target: LEED ND SSL Prerequisite 1
4. Provide support for electric vehicle use	TBD	Plug in stations	# of plug in stations	0	Comment: Should this be deleted – it seems too detailed for our project (i.e. we're not specifying the # of recreation centers needed)

Goal 4: Create a Healthy Urban Ecosystem

Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments
1. Establish an interconnected system of habitat.	Contiguous open space throughout the district that is 25' wide	Contiguous acres of open space	25' wide areas of open space	__acres (Reservation 113) but it is not contiguous	Rationale for Target: Most habitat corridors strive for a minimum of 50' wide but this seems unrealistic for such an urban area. Thoughts?
	Using only native plants, restore predevelopment native ecological communities or	Type of plant	% of native plants	<5% (guess)	Comment: the type of plantings is probably too detailed for this project, however, we will include a target since the objective is important.

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Objective	Target	Indicator	Metric (unit of measurement)	Baseline	Comments
	wetlands in the area equal to or greater than 10% of the development footprint.				How do you define “ecological communities”? Is this target covered when we say that all plants should be native? Rationale for Target: LEED ND SLL Credit 8
2. Incorporate natural elements into all aspects of the built environment	Biomass Density Index (BDI) Target as Defined in the ASLA Sustainable Sites Credit 4.6 (this includes green roofs and green walls)				Comments: BDI can be thought of as the density of plant layers covering the ground, roofs, green walls (targets exist for specific regions) Rationale For Target: ASLA Sustainable Sites Credit 4.6
3. Maximize tree canopy and plantings.	75% of streets with street trees at intervals no greater than 40 feet	% of streets with shade trees	# of streets with shade trees at intervals no greater than 40 feet / # of streets		Comment: Need to confirm capability of streets above parking lots, service ways etc. to grow trees. Rationale for Target: Leed – ND minimum is 60%
4. Prioritize native and diverse vegetation	Use only non-invasive plants that are appropriate for site conditions, climate, and design intent.	Type of plant			Comments: this objective and target seem too detailed for our project Rationale for Target: ASLA Sustainable Sites Prerequisite 4.2